



North Carolina Forest Service



A Division of the N.C. Department of Agriculture and Consumer Services
 Steve Troxler, Commissioner

BMP Newsletter

Best Management Practices for Water Quality & Soil Conservation



This issue's cover photo was taken near Meadows, NC in Stokes county. Taken July 31, 2020, this picture shows excellent soil stabilization technique and a streamside management zone at an intermittent stream. Tops/limbs/woody debris that touch the soil is an excellent best management practice. This practice often allows vegetation to establish as the material decays. In fact, the material can retain moisture needed for vegetation to establish and grow.

Estimates of soil erosion, using the Universal Soil Loss Equation as modified for forests, suggest that erosion rates occurring in the pictured approachway are like that of a mature forest (less than 1 ton/acre/year). Neat stuff eh?

The NCFS Water Resources Branch is leading a project to estimate soil loss at stream crossings across the state. Stay tuned for results as we finish data collection this year!

How important are forests for our drinking water supply?

Everything in nature either needs water or are strongly affected by its presence, absence or behavior. People need forests for many reasons to protect water quality and maintain streamflow during droughts so that many of us can have an uninterrupted supply of drinking water. In a recent U.S. Forest Service general technical report, Ning Liu and others quantified the role of state and private forest lands in providing surface drinking water supply for the southern states. They report 44.2 percent of the Southeastern U.S. region is covered by state and private forests and contributes 44.3 percent of the available surface water supply. That's 836 billion m³/yr, enough to fill Jordan Lake nearly 14,800 times each year!



Jordan Lake

Inside this issue:

How important are forests for our drinking water supply?	1-2
Steve Gibson receives the 2019 Moreland Gueth Water Quality Award	3
Infographic of the importance of forested watersheds to engage water utilities	4
Updated Resources on the NCFS Website	5
Did you know...	6
NCFS Water Quality Foresters	6

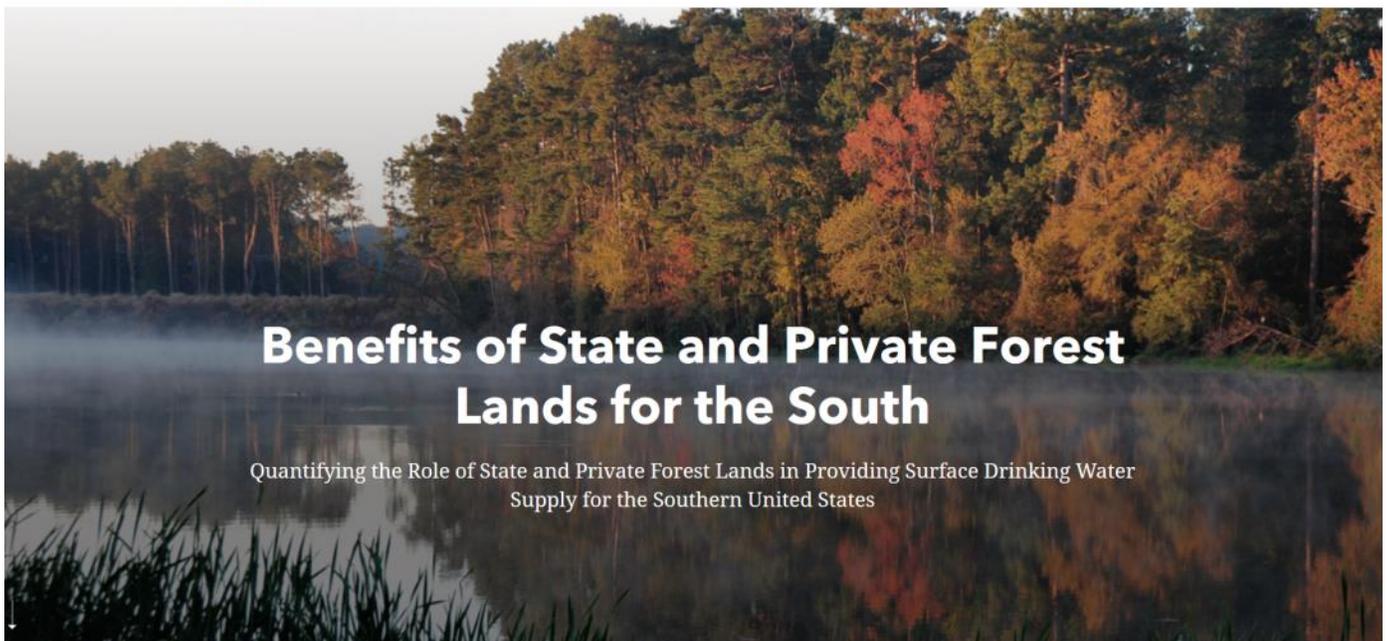
Liu, Ning; Dobbs, G. Rebecca; Caldwell, Peter V.; Miniati, Chelcy Ford; Bolstad, Paul V.; Nelson, Stacy; Sun, Ge. 2020. Quantifying the role of State and private forest lands in providing surface drinking water supply for the Southern United States. Gen. Tech. Rep. SRS-248. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 405 p. <https://doi.org/10.2737/SRS-GTR-248>.

How important are forests for our drinking water supply? continued...

Liu and others (2020) found that in North Carolina, state and private forests cover nearly 50% of our land base. Surface water from North Carolina forests partially supply 484 surface drinking water intakes that serve around 5.8 million people in North Carolina and another 5.2 million people in other states!

Check out the new report and interactive story map from the U.S. Forest Service Southern Research Station by clicking the image or website link below. Other great forest and water resources developed in part by the Southern Group of State Foresters—Water Resources Committee can also be found at this link.

<<<https://storymaps.arcgis.com/stories/7ffe1565b3f44d23819059ebc1632b78>>>



Your forest matters! What we collectively do with our forests in North Carolina influences drinking water for around 11 million people! The positive legacy that results from growing and managing forests not only sustains water quality and availability for the next generation but also sets the course for sustaining the next generation of forests. So, take steps to ensure your forest is properly managed. Contact your [local NCFS office](#) today to begin planning!

For more on how you might manage your forest for water, see [A Guide to Developing a Forest Watershed Management Plan](#).

Liu, Ning; Dobbs, G. Rebecca; Caldwell, Peter V.; Miniati, Chelcy Ford; Bolstad, Paul V.; Nelson, Stacy; Sun, Ge. 2020. Quantifying the role of State and private forest lands in providing surface drinking water supply for the Southern United States. Gen. Tech. Rep. SRS-248. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 405 p. <https://doi.org/10.2737/SRS-GTR-248>.

Steve Gibson receives the 2019 Moreland Gueth Water Quality Award

Each year, the Moreland Gueth award is given to a N.C. Forest Service employee or group of employees who has demonstrated creativity and/or dedication toward the protection of North Carolina's water resources. Established in 2010, this award was created in honor of the N.C. Forest Service's former Water Quality and Wetlands Staff Forester, Moreland Gueth. Moreland took a firm stance on protecting water quality and yet maintained a fair and practical approach to working with loggers, landowners, and the forestry community to keep "working forests working."



Steve Gibson, Rockingham County Ranger, was the recipient of this year's Moreland Gueth Water Quality Award. Steve has improved the county's water quality program by increasing the effort to conduct active logging inspections and reinspection. This shift from being reactive to logging complaints to proactively inspecting work before the logging operator left the site improved working relationships and public perception of forest management.

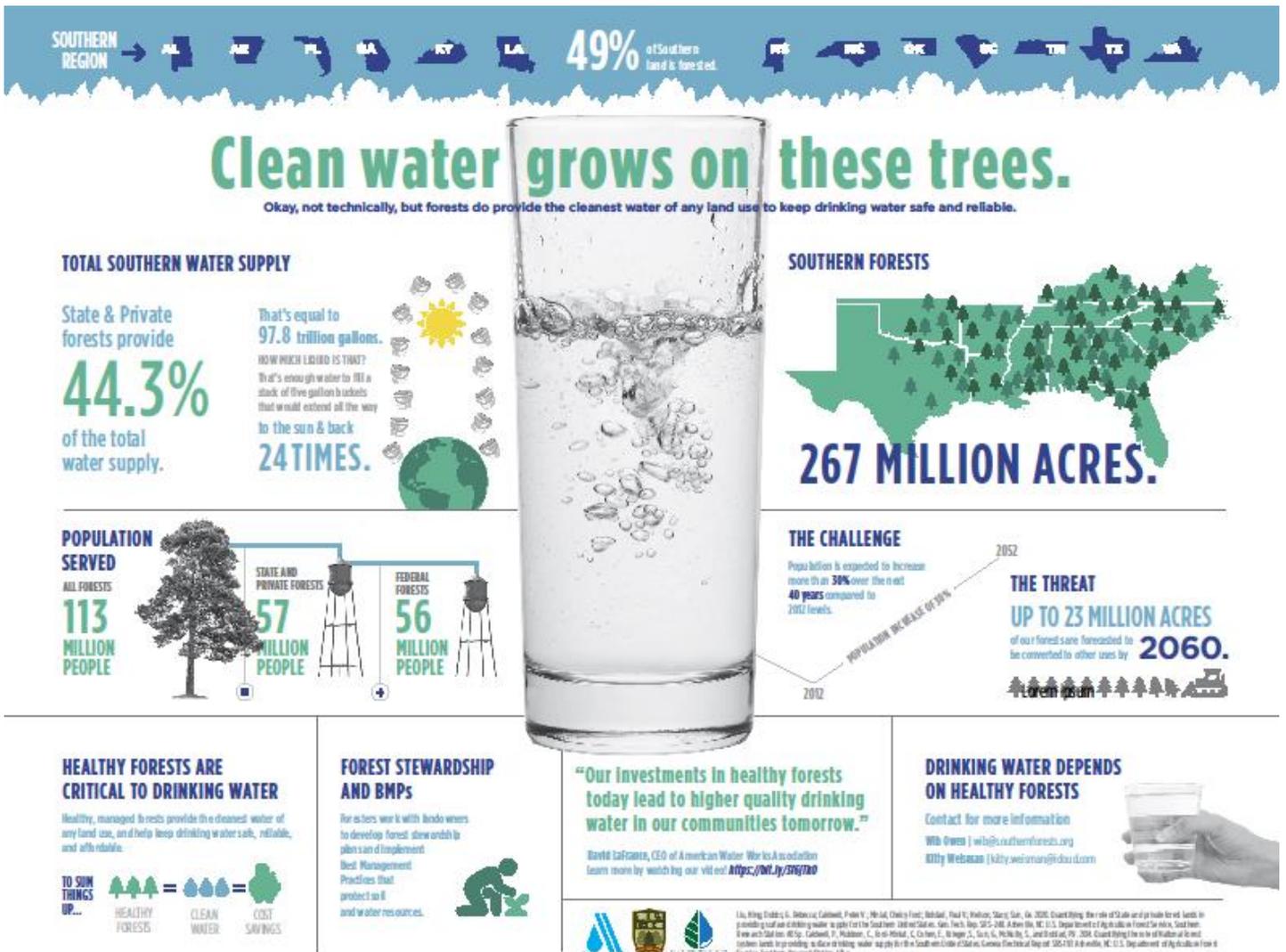
For the past three consecutive years, Steve led the state in all inspection categories. During FY 2019—2020, Steve conducted 286 logging inspections on 2,340 acres and engaged multiple stakeholders in each case. This sustained effort has resulted in positive working relationships with loggers, timber buyers, consulting foresters, landowners, and all others involved with logging and timber harvesting in Rockingham county.

With Steve's leadership during the past three years, the number of out-of-compliance tracts has decreased and the number of forest operator contacting the N.C. Forest Service has increased. This clearly demonstrates the positive effects of non-regulatory, educational, and transparent communication approaches to protect water quality on managed forest lands.

Steve understands the need to work WITH our logging contractors to manage our forests responsibly and, at the same time, protecting our streams. Thank you, Steve, for demonstrating leadership and for your sustained commitment to the N.C. Forest Service and to the citizens of North Carolina!

Infographic of the importance of forested watersheds to engage water utilities

People and businesses are busy and value their time, especially when it comes to out-of-the-box ideas. A good strategy to quickly convey viewpoints is to use targeted infographics. The American Water Resource Association, Southern Group of State Foresters, and the Southeastern Partnership for Forests and Water collaborated to do just that. See their product below or to download a PDF file visit: https://www.southernforests.org/water/Southern%20Region_Forests%20and%20Drinking%20Water_Infographic_v4_FINAL.pdf



Some water utilities depend on surface water supplies that forests help protect. A collaboration between the forestry and utility communities seems like a natural fit. Water utilities that contribute to forest management objectives will benefit themselves and the private forest landowners. Learn more about this mutual connection through the [Southeastern Partnership for Forest and Water](#).

Updated Resources on the NCFS Website

The NCFS continually strives to improve and add relevant resources for its customers. Recent notable updates related to BMPs and water include:

(1) Updated Forestry Leaflets on riparian buffer rules

Effective June 15, 2020, the Division of Water

Resources released an update to its riparian buffer rules ([15A NCAC 02B .0612](#), [15A NCAC 02B .0267](#), and [15A NCAC 02B .0608](#)). The NCFS has updated Forestry Leaflet publications for each riparian buffer rule. Each leaflet outlines the requirements that forestry operations must meet in order to comply with each rule. Individuals operating within this subject area are strongly encouraged to read the appropriate Forestry Leaflet publication in its entirety. Leaflets can be found at https://www.ncforestsERVICE.gov/water_quality/buffer_rules.htm. Don't forget to download free [USGS Topo maps](#) and [NRCS Soil Survey maps](#) to help identify subject streams.



(2) Revised Forestry Leaflet on streamside management zones (SMZs)



SMZs are a common BMP implemented on forestry operations. SMZs are forest areas adjacent to streams that provide protection to flowing water, to sensitive—often wet—soils, and to the in-stream plants and animals. SMZs serve as the last line of defense against sedimentation but also provide critical protection needed for good, clean water.

The revisions to this Forestry Leaflet include references to the current 'Forest Practice Guidelines Related to Water Quality' text, a cleaner appearance, streamlined text and the addition of photos. It is a useful resource for sharing with landowners and others.

<https://www.ncforestsERVICE.gov/publications/Forestry%20Leaflets/WQ04.pdf>

(3) Updates to the bottomland and swamp forests webpage

The [NCFS webpage on bottomland swamps](#) has:

- Newly added photos and links to new related resources and the NCFS Forestry Leaflets focus series on bottomland swamp forests;
- A bibliography of online-references related to bottomland swamp forest regeneration;
- Archived program, presentations, and field tour guide from the 2017 Bottomland Swamp Forest Symposium hosted in Wilmington; and
- A featured peer-reviewed publication of a regeneration study lead by NCFS personnel
 - ⇒ Slye, J.N.; Lang, A.J.; Gerow, T.A., Jr. [A Limited Rapid Assessment of Forest Regeneration in 24 Cypress and Tupelo Bottomland Swamps Following Clearcutting and Shovel Logging in the Coastal Plain of North Carolina](#). *Forests* **2020**, *11*, 854.

Western Region Events

Piedmont Region Events

Eastern Region Events

All events are assumed to be canceled or rescheduled due to COVID-19 precautions.

Did you know...

SMZs temper the movement of water, solid minerals and nutrients into nearby streams. Leaving a strip of trees and understory vegetation along streams protects the channel and banks, provides shade, and prevents logging slash and eroding soil from entering the stream.



Two common threads among SMZ recommendations are to avoid disturbances near the stream channel and to minimize disturbance to the forest floor. The forest floor is part of the soil. This is partly what sets forestry land use apart from other land uses. Forest soils are different from many other soils because there can be a deep layer of sticks and leaves, sometimes called duff. Duff is good at holding water and keeping the soil beneath it in place. It can be decomposed over time to naturally cycle nutrients. So, by maintaining this layer, we help reduce flooding downstream, protect critters in the stream, and maintain nutrients on-site—not to mention, that it will help keep you in compliance with most environmental regulations.

North Carolina Forest Service
WATER RESOURCES BRANCH



Protect, Manage and Grow Your Forest

www.ncforestservice.gov

Purchase NCFS Forest Tree Seedlings

www.buynctrees.com

NCDA&CS Agricultural Services

www.ncagr.gov

Keep Your Home Safe From Wildfire

www.ncfirewise.org

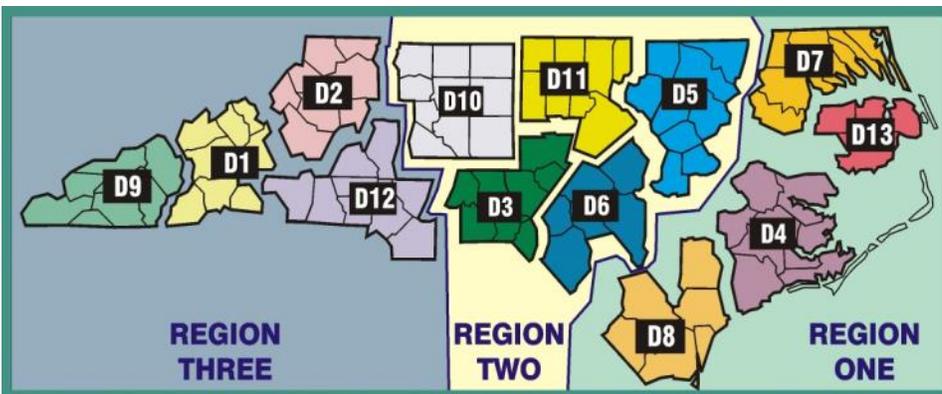
Go Out and Learn in the Forest

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www.gottobenc.com



Western Region

**Western Mountains
(D9, D1)**

[VACANT]: 828-665-8668 *R3 Office*

**Foothills
(D2, D12)**

Richard Cockerham: 704-616-0747

Piedmont Region

**Northern Piedmont
(D5, D6, D11)**

[VACANT]: 919-542-1515 *R2 Office*

**Southern Piedmont
(D3, D10, D11)**

Matt Vincett: 910-334-0025

Eastern Region

**Northern Coastal Plain
(North of the Neuse River)**

Jonathon Pearson: 252-286-0881

**Southern Coastal Plain
(South of the Neuse River):**

[VACANT]: 252-520-2402 *R1 Office*

To explore a career opportunity with the N.C. Forests Service begin by clicking [here!](#)